

Susan K. Arnold

1278 Forest Trails Dr., Castle Rock, CO 80108 • C: 720-272-7205 • susan.arnold@comcast.net • linkedin.com/in/susankarnold

SENIOR BUSINESS DEVELOPMENT EXECUTIVE

Business Development • Project Management • Leadership

Over fifteen years experience formulating business strategies and launching new business units in high-tech industry. Proven track record of successful sales, marketing and business leadership. Unique blend of entrepreneurial drive, financial management and strong negotiating skills.

Expertise creating and managing new profit centers. Successes include establishment of business units for a start-up company that grew into a Fortune 250 organization. The successful operation of these business units generated over a \$1 billion in revenue annually.

AREAS OF EXPERTISE

- Programming Acquisition
- Packaging and Placement Strategy
- Channel Development and Launch
- Budget and P&L Management
- Scheduling and Uplink Operations
- Branding, PR and Cross Promotion

PROFESSIONAL EXPERIENCE

ARNOLDCLAN CONSULTING, LLC – Denver, CO

2009 – Present

A consulting company assisting clients with product strategy, content acquisition, internet and television distribution and marketing expertise.

President

HOTHOUSE MEDIA, LLC – Denver, CO

2007 - 2009

A video product strategy, content development and distribution company that leverages high-level relationships and expertise across a range of distribution platforms - cable, satellite, broadband, and mobile.

Senior Vice-President, Business Development

- Negotiated, structured and closed key consulting contracts with several media companies including Liberty Media Group, Imagina US and InJoy Birth & Parenting Videos
- Formulated financial models associated with launching full time television channels, sports packages and video-on-demand products
- Developed sales and distribution plans for clients and assisted with sales of services to executives with the top satellite, cable and telecommunications companies
- Utilized programming knowledge to obtain critical information for clients regarding programming renewals, content needs and revenue forecasting
- Continuous development of key business relationships with C-level executives

ECHOSTAR COMMUNICATIONS CORPORATION (DISH NETWORK) – Denver, CO

1995 – 2007

One of the leading direct broadcast satellite TV providers in the US, providing programming to more than 13 million subscribers. Customers include home viewers as well as business customers in such industries as hospitality, restaurants, and retail.

Vice-President of Programming

Responsible for Video-On-Demand, Pay-Per-View, International Sports Acquisition, Ad Sales and Interactive Television business units representing approximately \$1B in annual revenue. Responsibilities for each business unit were as follows:

Pay-Per-View (PPV) and Video-On-Demand (VOD)

- Established and built the PPV and VOD Department from inception into a half-billion dollar enterprise for DISH Network
- Negotiated all DISH Network contracts with major and independent studios, sports content providers and event

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promoters

- Performed all financial analysis and was decision maker concerning profit and loss for PPV and VOD business unit
- Formulated annual budgets, revenue projections, product costs, marketing plans and personnel requirements
- Developed and implemented national and regional marketing strategies and programs in support of PPV and VOD
- Responsible for overseeing all operational aspects of the business including channel placement, content scheduling, satellite and fiber transport, call center data, online and automated telephone ordering and all uplink requirements
- Oversaw design and development plans for VOD, including designing the user interface and all functionality requirements
- Managed a staff of 40 direct reports in the areas of marketing, operations, and financial reporting

International and Domestic Sports Acquisition

- Negotiated exclusive (and non-exclusive) North American sports rights for television and internet for hundreds of soccer and cricket events, including exclusive World Cup Cricket rights and exclusive South American World Cup Qualifier rights for soccer
- Negotiated all contracts for US sports products including NBA League Pass, MLB Extra Innings, NHL Centre Ice, ESPN Full Court, ESPN Game Plan and MLS Shootout
- Negotiated all deals to sub-license content rights when available into Canada and the Caribbean
- Responsible for all marketing, finance and operations related to international and domestic sports content

Ad Sales

- Managed DISH Network \$200+ million Ad Sales business
- Increased ad sales revenue over 180% in a three year period
- Supervised staff of 50+ employees (internal & external)
- Oversaw relationships with outside contractors and vendors (e.g., Nielsen Media, Turner Media)
- Spearheaded all technological infrastructure developments needed to continue to grow the business rapidly (e.g., viewer measurement data, expand insertion capability on numerous channels, ability to localize commercials)

Interactive Television (ITV)

- Responsible for strategic planning for interactive channels that would enhance consumer experience on DISH Network (e.g., upgrade programming or pay bill via remote, CNN Enhanced, interactive weather application)
- Oversaw design and development of portal for interactive television on DISH Network (channel 100)
- Spearheaded and led engineering and programming development meetings
- Responsible for annual budgets, revenue projections, marketing strategies and product costs
- Managed direct reports in areas of negotiations, marketing, strategic development and financial reporting

Additional positions held with EchoStar:

Director of Pay-Per-View and International Programming

- Worked with domestic and international programmers, negotiated contracts, gave strategic input for domestic and international programming mix and oversaw channel launches, including channel placement decisions

THUNDERBIRD ASSOCIATED STUDENT LEGISLATIVE COUNCIL – Glendale, AZ

1994 - 1995

Vice-President

- Managed ASLC operations and coordinated Steering Committee
- Served as Chairman of the Program Board
- Budget management (\$25K per semester)
- Hired and managed staff of over 50 employees including those for Election Committee, Orientation Team, Graduation Committee and Fortune (Yearbook) Editor

HONEYWELL – Denver, CO

1992 - 1994

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Project Associate

- Developed and implemented a system used to track revenue and expense of each construction project Honeywell was involved with at the new Denver International Airport

HONEYWELL – Munich, Germany

1990 - 1992

Marketing Associate

- Created and published a Project Management Manual outlining Honeywell's role at the new Munich II Airport. The Manual was designed to be used across cultures to over 500 employees and customers worldwide

EDUCATION

THUNDERBIRD SCHOOL OF GLOBAL MANAGEMENT – Glendale, AZ

1995

Masters of International Management (MIM)

- Team member of Thunderbird Corporate Consulting Program - Rural Metro Corporation Mexican Market Analysis and Entry Strategy
- Team member of Advanced Consumer Marketing Seminar - Univision Television
- Advanced German Finance and Marketing language studies
- Secondary concentration in Corporate Finance

GOETHE INSTITUTE – Munich, Germany

1992

German Language Studies

UNIVERSITY OF COLORADO - Boulder, CO

1990

Bachelor of Science, International Business & Marketing

SALZBURG COLLEGE – Salzburg, Austria

1989

Study Abroad Program: Emphasis on International Business, Culture and Arts

OTHER

- Languages: English and conversant in German
- Memberships: Mentor for the Women's Vision Foundation, Certified L.E.A.N Start Coach (Lifestyle, Exercise, Attitude and Nutrition), Habitat for Humanity Volunteer
- Interests: Skiing, Mountain Biking, Traveling and Languages

EXHIBIT G

BEFORE THE
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In re Complaint of)	
)	
BLOOMBERG L.P.)	MB Docket No. 11-104
)	
v.)	
)	
COMCAST CABLE COMMUNICATIONS, LLC)	
)	
)	
)	

DECLARATION OF ADAM GOLDBERG

I, Adam Goldberg, hereby declare under penalty of perjury that the following is true and correct to the best of my knowledge.

1. My name is Adam Goldberg. My business address is 3003 Barkley Gate Lane, Fairfax, VA 22031.

2. I have nineteen years of experience working as a technology consultant, software engineer, and public policy advocate in the media and consumer electronics industry and for software and technology companies. I am a senior member of the Institute of Electrical and Electronic Engineers (IEEE) and hold a patent in digital closed captioning technology (U.S. Patent #6,097,439).

3. From May of 1992 through March of 1995, I served as a senior software engineer at Microware Systems Corp. Microware Systems develops and supports sophisticated real-time operating system software, network and communications software, and development tools for

embedded systems, communications, and consumer products. In that capacity, I was a member of the team that developed one of the first middleware operating environments for digital television receivers.

4. From March of 1995 through June of 2000, I worked as an engineer at Harmonic, Inc. In that capacity, while serving in the Consumer Network Products division, I led a team that was responsible for the planning, scheduling, software architecture, and engineering design related to porting software into a new processor and operating system. I was also a member of the silicon chip engineering team that designed a set-top integration chip and a member of the software team that was successful in bringing a multiple network digital set-top box to production. Among other responsibilities, my duties included work on the system design and architecture, portions of networking protocols, MPEG decoder driver, MPEG decoder chip microcode specification, video digital-analog-converter controls (analog-digital switching), and lab network design.

5. Also while at Harmonic, I was a key member of the group responsible for standards activities. I was the primary delegate to the Digital Video Broadcasting project (DVB) (and chair of the DVB Simulcrypt committee), and co-founder of OpenCAS (an early attempt at separating set-top box hardware from security systems). I was the primary architect and editor of the Advanced Television Systems Committee (ATSC) Standard for Conditional Access (ATSC A/70). As a key member of the architectural decision making team, I analyzed end-to-end digital and hybrid television systems and served as an internal consultant on end-to-end television system issues and related standards work.

6. From July of 2000 to April of 2001, I served as the Director of Exodus Communications. Exodus Communications was a leading Internet infrastructure services group that offered many services, including high-end web hosting, collocation assistance, network access, and

network storage. In that capacity, I built a technical advisory and planning team to develop technology applications for new high value-add managed service product offerings. I also worked with others at the organization on the implementation of these offerings.

7. From May of 2001 through June of 2006, I served as the Director of Television Standards and Policy Development at Sharp Laboratories of America. Sharp Laboratories operates a research and development laboratory that offers services related to consumer systems and technology, digital imaging systems, and advanced video and display technology. In that capacity, I served as the primary standards representative to ATSC, Society of Cable Telecommunications Engineers (SCTE), and Consumer Electronics Association (CEA). I also co-chaired the Copy Protection Technical Working Group (CPTWG), participated in DVB Copy Protection activities, and was involved with other international organizations. I contributed significantly to the industry's "Cable-Ready Plug & Play" technical specifications and negotiations and worked on Enhanced 8-VSB signaling issues. I also coordinated and directed television-related standards activities in the United States, including digital television, cable television, and copy protection issues.

8. From June of 2006 through November of 2008, I served as Vice President of Government and Industry Affairs at Pioneer North America, Inc. Pioneer was an innovative leader in television, cable set-top box, and optical disc technologies and a manufacturer of innovative high-tech entertainment and electronic products such as high-performance audio, video and computer equipment for the home, car and business markets. As head of the Washington office, I served as the primary federal representative for Pioneer's home and mobile entertainment divisions. I coordinated and developed technology policy positions with international and domestic divisions of the company. I also coordinated, directed and implemented regulatory and lobbying activities related to those policies. I also initiated, developed, planned and implemented technology

demonstrations. While at Pioneer, I chaired the consumer electronics industry's negotiations with the cable television industry on the compatibility of retail devices with cable networks. I also represented Pioneer on the Consumer Electronics Association's Video Board, chaired CEA's Television Manufacturer's Caucus, and was elected vice-chair of the CEA Technology and Standards Council (2009 term). I also served as a Member of the ATSC Board of Directors.

9. Since December of 2008, I have been an independent consultant specializing in strategic marketing, technical challenges and public policy for the digital television industry. In this role, I have assisted companies in developing and refining business strategies for digital cable devices and digital television. I have also assisted clients in evaluating and planning content protection and anti-piracy measures, and have served as an occasional expert witness.

10. I am co-author of two papers relating to the implementation of digital television system information and digital television receivers, which include discussions of channel number signaling: (1) B. J. Lechner, R. Chernock, M. K. Eyer, A. Goldberg and M. S. Goldman, "The ATSC Transport Layer, Including Program and System Information Protocol (PSIP)," *Proceedings of the IEEE Special Issue on Global Digital Television: Technology and Emerging Services*, vol. 94, no. 1, pp. 77-101, Jan. 2006; (2) J. G. N. Henderson, M. S. Deiss, A. Goldberg, B. Markwalter, M. Muterspaugh, and A. Touzni, "ATSC DTV Receiver Implementation," *Proceedings of the IEEE Special Issue on Global Digital Television: Technology and Emerging Services*, vol. 94, no. 1, pp. 119-147, Jan. 2006.

11. I have also presented (or will present) papers on various technical topics, including those involving digital television and cable television, at the following forums:

Audio Engineering Society (AES) Convention, October 2011
IEEE Broadcast Technology Society Symposium, October 2009, October 2011
Sports Transmission Forum, May 2009
Korea Broadcast, Audio, Lighting Equipment Show, 2009, 2010

NAB Engineering Conference, 2002, 2004, 2006

Consumer Electronics Show, 2007

IEEE International Conference on Consumer Electronics, 2003, 2005

Hollywood Post Alliance Technology Retreat, 2005, 2006, 2009

12. I was recently asked by Bloomberg L.P. (“Bloomberg”) to provide an opinion on technical issues related to moving a network from one channel position to another channel position. I have also reviewed the Answer of Comcast Cable Communications, LLC in the above-captioned proceeding, including all exhibits and attachments.

13. In what follows, I explain the process of moving a network, such as Bloomberg Television (“BTV”) from one channel position to another on a cable system, which is relatively simple as a technical matter.

14. In the digital environment, moving a network from one channel position to another is not complicated from an engineering perspective. It is important to understand that the channel numbers displayed to users in a digital cable television system are unrelated to the frequency used to transmit the audiovisual content to users. In a digital system, channel numbers thus are arbitrary and are merely a reference to the programming.

15. Each channel in a digital system consists of a set of video, audio and other components. Digital cable systems supply data structures which list these components, the RF frequency that they are carried on, and other data, including the channel number. A receiver tunes to a channel by reading the data structure, tuning to the proper RF frequency, and selecting the appropriate audio and video components.

16. In this digital environment, the channel number is merely a data field that contains a number which is presented to a user, and that a user uses to identify his or her desired programming.

17. As a result, changing the channel number of a network (such as BTV) consists of merely supplying a different number in that network's channel number field, which is simple from a technical perspective. This is accomplished simply by changing software settings in the devices that update and maintain the "system information" for the cable systems ("system information" is a term that describes the data regarding the system, including channel numbers, language codes, and other information).

18. Such updates, management and configuration of system information are a common and generally simple operation.

19. Changing channel positions in a digital environment does not require any change in the frequency used to transmit a network's audiovisual content.

20. In the analog environment, moving a network from one channel position to another involves slight changes to channel distribution configuration. This may involve software configuration changes (where video distribution routers are used), or could (at most) involve physically swapping a pair of cables at a headend. In short, changing channel positions in an analog environment is still relatively simple from an engineering perspective.

21. The changes necessary to move analog channels within the lineup may involve a small amount of operational work to reconfigure system information or swap cables at headends, but do not require widespread or overly burdensome engineering tasks. Furthermore, lineup changes are planned events, which occur periodically. The channel positioning realignment sought by Bloomberg would be no more complicated or burdensome than lineup changes initiated by Comcast for its own purposes.

22. In fact, Comcast's own expert agrees with my conclusion that at most minor engineering changes are necessary to adjust the channel lineup: "Channel realignment also requires Comcast to perform physical engineering work at each affected system headend. Typically there are minimal physical engineering changes associated with channel realignments . . ." (Answer, Ex. 3 at ¶ 20.)

23. For all of these reasons, I disagree with the statement made by Comcast that channel relocations "require Comcast to perform substantial physical engineering work at each affected system headend each time a relocation [is] required." (Answer at ¶ 85). This statement is not correct.

24. I declare under penalty of perjury that the foregoing is true and correct to the best of my information, knowledge and belief.

Dated: August 29, 2011

A handwritten signature in black ink, appearing to read 'Adam Goldberg', written over a horizontal line.

Adam Goldberg

Appendix A

Adam Goldberg
AGP, LLC
Fairfax, VA 22031
+1-202-507-9900
adam@agp-llc.com

Background

Wide ranging technical foundation, including engineering work on audio/video silicon products, real-time operating system development, set-top box development, and audio/video compression systems development and architecture, and internet technologies. Experience evaluating technology products for possible use. Experience with internet architectures, tracking internet technologies and future direction.

Significant experience with digital cable television standards-setting, interaction and interoperation with cable systems. Led consumer electronics interests in inter-industry discussions on cable compatibility.

Long experience participating in multi-industry forums, chairing and participating in technical standards committees, policy and strategy-forming groups, including international groups. Leader in consumer electronics standards-setting.

Employment History

**12/08 – Present Principal
AGP, LLC**

Independent consultant specializing in strategic marketing, technical challenges and public policy for the digital television industry.

**6/06 – 11/08 Vice President, Government and Industry Affairs
Pioneer North America**

Head of Pioneer's Washington office. Primary Federal representative for Pioneer's home and mobile entertainment divisions. Investigate technologies and their impact on public policy, and public policy's impact on products.

Coordinate and develop technology policy positions with international and domestic internal clients, including legal, senior executives and operations. Coordinate, direct and implement

regulatory and lobbying activities to implement those policies. Participate in various industry coalitions and trade groups representing Pioneer's interests. Participate in state and federal government workshops, stakeholder meetings and similar forums representing Pioneer's interests. Initiate, develop, plan and implement technology demonstrations to government decision-makers.

Chaired the Consumer Electronics industry's negotiations with the cable television industry on compatibility of retail devices with cable networks. Pioneer's representative on the Consumer Electronics Association's Video Board, chaired the Consumer Electronics Association's Television Manufacturer's Caucus (TVMC), elected vice-chair of the CEA Technology & Standards Council (2009 term). Member of the Advanced Television Systems Committee (ATSC) Board of Directors.

**5/01 – 6/06 Director, Television Standards & Policy Development
Sharp Laboratories of America**

Primary standards representative to ATSC, SCTE, and CEA standards developing committees. Co-Chair of the Copy Protection Technical Working Group (CPTWG), and participant in DVB Copy Protection activities and other international organizations.

Coordinate and direct television-related public policy activities, including interaction with the Federal Communications Commission, Federal and State Legislatures, and other government agencies. Coordinate and direct television-related standards activities in the United States, including digital television, cable television and copy protection issues.

Maintain standards library, memberships in standards developing organizations. Provide liaison and education between Sharp Corporation world-wide and United States television and related standards activities (including Copy Protection technical, business, legal and public policy matters).

Significant contributor to the industry "Cable-Ready Plug & Play" technical specifications and negotiations, and to e.g., Enhanced 8-VSB signaling issues. Chair, Society of Cable Telecommunications (SCTE) Digital Video Subcommittee (DVS) Working Group 2 (Transport).

**7/00 – 4/01 Director
Exodus Communications (formerly GlobalCenter)**

Built a technical advisory and architectural team to explore new technologies and develop applications of the technologies to new managed service (and other higher value-add) product offerings. Consult with product development organization on implementation details. Mandate included monitoring of relevant standards organizations (e.g., IETF) and industry trends.

**3/95 – 6/00 Staff Engineer, Harmonic, Inc.
(Formerly C-Cube Microsystems, Formerly DiviCom, Inc.)**

DiviCom division (now Harmonic)

Key member of corporate standards activities. Primary delegate to DVB (chair of DVB Simulcrypt committee) and co-founder of OpenCAST™. Primary architect and editor of the ATSC Standard for Conditional Access (ATSC A/70). Technical representative to standards organization, including CEA, SMPTE, DAVIC and TVAnytime.

Key member of corporate architectural decision making team. Analysis of end-to-end digital and hybrid television systems (contribution, distribution and emission) including reference model design and critical gap analysis.

Led team developing architecture of event-based scheduling of equipment reconfiguration feature. Internal consultant on end-to-end television system issues and related standards and ongoing standards work.

Consumer Network Products division (acquired by LSI):

Lead of team porting software to new processor and operating system. Planning, schedule, software architecture and design. Also responsible for tracking vendor and subcontractor deliverables and schedule. Participated in contract negotiation.

Member of VLSI team designing a digital set-top integration chip. Tracking copy protection issues for inclusion of copy protection primitives in silicon.

Member of software team successful in bringing a multiple network digital set-top box to production. Duties included system design and architecture, portions of network stacks, MPEG decoder driver, MPEG decoder chip microcode specification, DAC controls (analog-digital switching, Macrovision copy protection issues), lab network design, vendor and customer interaction. (US Patent 6,097,439, other patent(s) pending).

5/92 – 3/95

Sr. Software Engineer, Microware Systems Corp.**Standards Activities**

5/01 – present	Deeply involved in various CEA committees, elected to Video Division Board
11/97 – present	Deeply involved in various ATSC activities, elected to ATSC Board of Directors; Chair TSG/S7
11/97 – present	SCTE DVS
11/97 – present	SMPTE various standards efforts
2001 – 2006	CPTWG (consumer electronics co-chair)
11/98 – 6/06	DVB

1999 – 2000	IETF
9/95 – 12/97	DAVIC
3/95 – 9/95	MPEG DSM-CC

Awards

U.S. Patent #6,097,439
IEEE Senior Member

Papers Published

B. J. Lechner, R. Chernock, M. K. Eyer, A. Goldberg and M. S. Goldman, “The ATSC Transport Layer, Including Program and System Information Protocol (PSIP)”, *Proceedings of the IEEE Special Issue on Global Digital Television: Technology and Emerging Services*, vol. 94, no. 1, pp. 77-101, Jan. 2006

J. G. N. Henderson, M. S. Deiss, A. Goldberg, B. Markwalter, M. Muterspaugh, and A. Touzni, “ATSC DTV Receiver Implementation”, *Proceedings of the IEEE Special Issue on Global Digital Television: Technology and Emerging Services*, vol. 94, no. 1, pp. 119-147, Jan. 2006

Papers Presented

Audio Engineering Society (AES) Convention, October 2011*
IEEE Broadcast Technology Society Symposium, October 2009, October 2011*
Sports Transmission Forum, May 2009
Korea Broadcast, Audio, Lighting Equipment Show, 2009, 2010
NAB Engineering Conference 2002, 2004, 2006
Consumer Electronics Show 2007
IEEE International Conference on Consumer Electronics 2003, 2005
Hollywood Post Alliance Technology Retreat, 2005, 2006, 2009
* (future)

Education

B.S., Computer Science, Iowa State University, 1992

EXHIBIT H

**REDACTED PURSUANT TO REQUEST FOR
CONFIDENTIAL TREATMENT**

EXHIBIT I

FOR PUBLIC INSPECTION

**REDACTED PURSUANT TO REQUEST FOR
CONFIDENTIAL TREATMENT**